

cember 31 is derived from a comparison with 458 A.S.C. by the comet seeker.

STARFIELD. 20-foot equatoreal reflector. (W. Lassell, Esq.)

Starfield Sid. T.

$\begin{smallmatrix} h & m & s \end{smallmatrix}$ 8 10 10⁹ Astræa follows a in 57^s 13 follows b 34^s 44

8 31 23³ Astræa S. of a 9' 46⁶² S. of b 4' 53⁴⁷

Approximate R.A. of a 4^h 39^m 48^s N.P.D. 71° 33'

a (8.9) mag. b (9.10) mag.

Mr. Chevallier suggests that a star once observed by Lord Wrottesley, and not to be found when subsequently looked for, might be an earlier appearance of *Astræa*. Mr. Hind has consulted Lord Wrottesley's MSS., but cannot find any evidence to confirm Mr. Chevallier's hint.

ELEMENTS of ASTRÆA.

Dr. Peters and M. Otto Struve have computed the following elements from the Pulkowa observations of December 26 and December 30, and the Berlin observation of December 14.

Perihelion passage, 1846, June 19.582. Berlin Mean Time.

Log. mean motion	2.920951	
Log. a	0.419370	
Log. e	9.330833	
$\pi - \Omega$	354° 58' 56"	} Apparent Equinox, Dec. 26.
Ω	140° 56' 30"	
i	5° 20' 10"	

The three observations are represented within 1". Aberration and parallax are taken into account.

Dr. Galle, of Berlin, has deduced the following elements from the observations of December 14, December 31, and January 15. They represent the places on those days exactly, but diverge in right ascension on the other side of Encke's elements.

Mean Anomaly.....	318° 51' 25 ⁰⁸	Jan. 0, 1846.
Mean Longitude	94 7 15 ³⁸	} Mean Equinox, Jan. 0.
Perihelion.....	135 15 50 ³¹	
Node.....	141 25 47 ⁷⁴	
Inclination	5 19 17 ⁷⁸	
ϕ	10 51 53 ⁵⁰	
Log. a	0.4112122	

Mean Daily Motion 857⁴⁰⁹⁶

Sidereal Revolution, 1511.530 days.

Mr. A. Graham, of Markree Observatory, has computed the following elements from the observations made at Altona and Ham-

burg on December 17, and those made at Markree by Mr. Cooper with the meridian circle on January 20 and February 17.

Mean Longitude	94° 46' 51".14	} Jan. 1, 1846, Greenwich M. T. Mean Equinox, Jan. 1, 1846.
Mean Anomaly.....	319 29 32.32	
Perihelion	135 17 18.82	
Node	141 16 59.46	
Inclination	5 19 59.06	
Eccentricity	11 10 4.09	
Log. <i>a</i>	0.4138782	
Mean Motion	849".5508	
Revolution, 1525.5 days,		

A comparison of the foregoing elements with the observation of January 20 gives the *errors* of the calculated place, +0".01 in latitude, and -0".37 in longitude.

A comparison of M. Encke's elements with the same observation gives the *errors* of the calculated place, -35".8 in right ascension, and +5".1 in declination.

Mr. Hind, director of Mr. Bishop's Observatory, South Villa, Regent's Park, obtains the following elements based on the Altona observations of December 17, the Bonn observations of January 2, and the Königsberg places of January 14:—

Mean Longitude	94° 1' 51".09	Jan. 0, 1846, G. M. T.
π	135 15 52.80	} Mean Equinox, Jan. 0.
Ω	141 19 12.66	
<i>i</i>	5 19 54.92	
ϕ	10 48 44.06	
Log. <i>a</i>	0.4116841	
Log. Mean Motion.....	2.9324804	
Sidereal Revolution, 1514.0 days.		

BIELA'S (or Gambart's) COMET.

This comet at its present apparition has shewn itself *double*.

Professor Challis announced this extraordinary appearance in the following letter to the President:—

"On the evening of January 15, when I first sat down to observe it, I said to my assistant, 'I see *two* comets.' However, on altering the focus of the eyeglass and letting in a little illumination, the smaller of the two comets appeared to resolve itself into a minute star with some haze about it. I observed the comet that evening but a short time, being in a hurry to proceed to observations of the new planet. On first catching sight of it on this evening (Jan. 23), I again saw two comets. Clouds immediately after obscured the comet for half an hour. On resuming my observations, I suspected at first sight that *both* comets had moved. This suspicion was afterwards confirmed: the two comets have moved in equal degree, retaining their relative positions. I com-

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